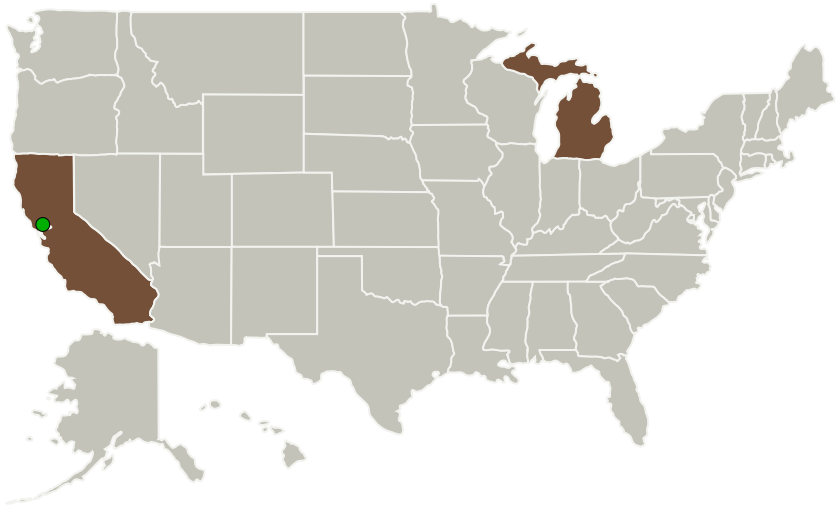
Small Airborne Hyperspectral Wide Area Imager for Disaster Response and Earth Science, Phase I

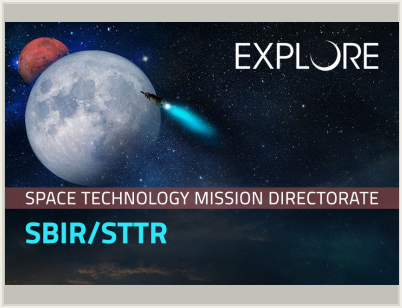
Completed Technology Project (2011 - 2011)

Project Introduction

The proposed hyperspectral plus LWIR system will deliver high signal to noise performance, a wide spectral range, nominally 365 nm to 1.7 um, a single long wave IR band, low optical aberration This sensor system is designed to fit within the size, weight, and power (SWaP) envelopes of small to medium sized UAS (such as the Sierra operated by NASA Ames Research Center) and manned light aircraft (such as the Cessna 172). The system is based on an anamorphic hyperspectral imager. In addition to the UV/Vis/SWIR hyperspectral imager the system will include a single band Long Wave IR (LWIR) imager providing temperature information which is useful for a wide variety of environmental research, and extends the application of the instrument to a number of problems including disaster response, oil spill mapping and detection, and wild fire research. With this NASA SBIR proposal we will develop the system specifically for environmental research and monitoring to a TRL 8 with the final six months of the Phase II dedicated to calibration, flight tests, and development of a certified installation for light aircraft.

Primary U.S. Work Locations and Key Partners





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Organizations Performing Work	Role	Type	Location
Xiomas Technologies	Lead Organization	Industry	Ypsilanti, Michigan
Ames Research Center(ARC)	Supporting Organization	NASA Center	Moffett Field, California

Primary U.S. Work Locations	
California	Michigan

Project Transitions

February 2011: Project Start

September 2011: Closed out

Closeout Documentation:

- Final Summary Chart*(https://techport.nasa.gov/file/138509)*

Organizational Responsibility

Responsible Mission Directorate:

Space Technology Mission Directorate (STMD)

Lead Organization:

Xiomas Technologies

Responsible Program:

Small Business Innovation Research/Small Business Tech Transfer

Project Management

Program Director:

Jason L Kessler

Program Manager:

Carlos Torrez

Principal Investigator:

John M Green

Co-Investigator:

John C Green

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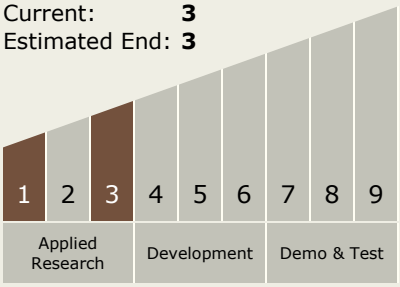
Technology Maturity (TRL)

Start: **1**
Current: **3**
Estimated End: **3**



Technology Areas

Primary:

- TX08 Sensors and Instruments
  - TX08.1 Remote Sensing Instruments/Sensors
    - TX08.1.3 Optical Components

Target Destinations

The Sun, Earth, The Moon, Mars, Others Inside the Solar System, Outside the Solar System